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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,752

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Valery Alexandrovich Kononov

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EXAMINER

MCNALLY, KERRIL

ART UNIT

PAPER NUMBER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,752	<b>Applicant(s)</b> KONONOV ET AL.	
	<b>Examiner</b> KERRI L. MCNALLY	<b>Art Unit</b> 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of the Claims***

1. Claims 1-13 have been canceled via a preliminary amendment.
2. Claims 14-26 are currently pending.

### ***Claim Objections***

3. **Claim 22** is objected to because of the following informalities: Examiner is unsure whether "an associated display module" is the same display module as claimed in claim 14. For purposes of examination, Examiner will assume it is a separate associated display module. Furthermore, Examiner is unsure whether "a plurality of display modules" includes the display module as claimed in claim 14. For purposes of examination, Examiner will assume it is included. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. **Claims 14, 15, 17, 22, 23, 24, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2001/0040509 (Dungan).

Regarding claims 14 and 15, Dungan teaches an apparatus and method for wireless gas monitoring comprising a sensor module and a master station.

- The sensor module comprising:
  - a first housing including a gas sensor (Fig. 7; Paragraphs [0090] and [0091]);
  - sensor module contains means to convert an analog output signal corresponding to the concentration of the selected gas in the atmosphere adjacent to the sensor to a digital signal that is transmitted by radio transmission to a master station (Abstract; Paragraphs [0112] and [0113]).
- The master station comprises:
  - A second housing (60; Paragraph [0078]);

- A wireless receiver for receiving radio transmissions from a sensor module (Abstract; Paragraph [0078]); and
- A Display for displaying the concentration of gas (70; Paragraphs [0078] and [0115]).

Furthermore, Dungan teaches that the first and second housings are electrically isolated from one another (Fig. 3)

Dungan does not expressly teach that the first and second housings are connectable releasably together. However, Examiner considers that one of ordinary skill in the art at the time the invention was made would consider these two housings able to be releasably connected to one another with means well known in the art, such as with Velcro or string.

Finally, Dungan does not expressly teach that the apparatus can be operated with the display module and the sensor module connected together or physically separated. However, Examiner considers that since these two are able to be releasably connected together with means well known in the art, as described above, that they could be operated either connected together or physically separated. Furthermore, Examiner notes that whether the display module and the sensor module are connected together or physically separated has no effect on the operability of the apparatus.

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Regarding claim 17, Dungan further discloses that sensor module stations are battery powered (Paragraph [0065]; Fig. 8). Dungan discloses that the master station has power means, but does not explicitly disclose battery means (62; Paragraph [0078]). However, one of ordinary skill in the art at the time the invention was made would believe it obvious to utilize battery means in the master station so that the master station could have its own independent power means, thus making it portable as well.

Regarding claim 22, Dungan further discloses that the sensor module is arranged to transmit data to the display so it can display sensor readings taken by the sensor module (*the sensor module is arranged to transmit standard data signals to an associated display module*) (Paragraph [0072]).

Furthermore, Dungan further discloses that a sensor module with a radio transmitter can transmit gas levels to multiple master controllers (*and a broadcast signal to a plurality of display modules*) (Paragraph [0003]).

Regarding claim 23, Dungan further discloses that when the microprocessor detects that a pre-determined concentration of the selected gas is present in the atmosphere, the microprocessor initiates transmission by the radio to the master station (*wherein the measurement means in the sensor module defines a gas concentration threshold, data signals indicating a gas concentration exceeding the gas concentration threshold being transmitted as broadcast signals*) (Paragraph [0113]). Examiner considers that when it meets the pre-determined concentration (the threshold), then it alerts.

Regarding claim 24, Dungan further discloses that the predetermined condition can be varied by actuating a data entry apparatus to change the data stored (Paragraph [0026]).

Regarding claim 25, Dungan further discloses that the sensor module transmitter is controlled to transmit in licensed radio frequencies to provide longer distance capability (Paragraph [0067]). Examiner considers this to mean that the sensor module controls the communication protocol between itself and other modules.

7. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2001/0040509 (Dungan) in view of US Patent No. 6,031,454 (Lovejoy et al.).

Regarding claim 16, Dungan teaches the system of claim 15 as discussed above.

Dungan does not expressly teach the transmitter and receiver employ spread spectrum techniques.

Lovejoy teaches a monitor that transmits to a central computer utilizing spread-spectrum radio signals (Column 5, lines 35-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a well known technique, such as spread-spectrum, for a variety of reasons, including establishment of

secure communications, resistance to natural interference and jamming, and to prevent detection.

8. **Claims 18, 19, 22, 23, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2001/0040509 (Dungan) in view of US Patent No. 5,814,968 (Lovegreen et al.).

Regarding claims 18 and 19, Dungan teaches the system of claim 17 as discussed above. Dungan does not expressly teach wherein the batteries are rechargeable, at least the first housing being provided with terminals receivable in a charger to charge the battery or batteries in both housings.

Lovegreen teaches a battery charger for a rechargeable paging system wherein a plurality of rechargeable electronic devices can be electrically connected for recharging to a battery charger base unit simultaneously by stacking the electronic devices on each other to establish an electrical connection through each device to the battery charger base unit (Column 5, lines 9-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize this charging system as disclosed in Lovegreen with the invention of Dungan so as to connect the sensing unit to the base unit when it needs recharged, thus recharging the batteries simultaneously together, and thus saving time by not having to recharge them separately.



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Regarding claim 22, Dungan further discloses that the sensor module is arranged to transmit data to the display so it can display sensor readings taken by the sensor module (*the sensor module is arranged to transmit standard data signals to an associated display module*) (Paragraph [0072]).

Furthermore, Dungan further discloses that a sensor module with a radio transmitter can transmit gas levels to multiple master controllers (*and a broadcast signal to a plurality of display modules*) (Paragraph [0003]).

Regarding claim 23, Dungan further discloses that when the microprocessor detects that a pre-determined concentration of the selected gas is present in the atmosphere, the microprocessor initiates transmission by the radio to the master station (*wherein the measurement means in the sensor module defines a gas concentration threshold, data signals indicating a gas concentration exceeding the gas concentration threshold being transmitted as broadcast signals*) (Paragraph [0113]). Examiner considers that when it meets the pre-determined concentration (the threshold), then it alerts.

Regarding claim 24, Dungan further discloses that the predetermined condition can be varied by actuating a data entry apparatus to change the data stored (Paragraph [0026]).

9. **Claims 20, 21, 22, 23, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2001/0040509 (Dungan) as modified by US Patent No. 5,814,968 (Lovegreen et al.) and further in view of US Patent No. 6,310,960 (Saaski et al.).

Regarding claims 20 and 21, Dungan and Lovegreen teach the system of claim 19 as discussed above. Dungan does not explicitly teach energy transfer means are provided on the respective housings to transfer sufficient energy from the first housing to the second housing to charge the battery or batteries in the second housing, without requiring electrical contact between the housings. Nor does Dungan teach a light source is provided in the first housing, arranged to be activated when the first housing is receiving in a charger, and a photovoltaic cell is provided on the second housing, the light source and the photovoltaic cell being located adjacent on another when the two housings are connected.

Saaski teaches a rechargeable hearing aid system wherein an optical charger may comprise a light source and the hearing aid comprising a photovoltaic cell for converting the light received into electrical energy for recharging the hearing aid's rechargeable battery (Column 3, lines 35-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine this feature with the invention of Dungan and Lovegreen so that when the first housing is plugged into a charger, a light source is activated in the first housing to charge the second housing with the

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photovoltaic cell. This way, by providing a non-contact charging system, you have the advantage of a system that cannot be hindered by a bad electrical contact.

Regarding claim 22, Dungan further discloses that the sensor module is arranged to transmit data to the display so it can display sensor readings taken by the sensor module (*the sensor module is arranged to transmit standard data signals to an associated display module*) (Paragraph [0072]).

Furthermore, Dungan further discloses that a sensor module with a radio transmitter can transmit gas levels to multiple master controllers (*and a broadcast signal to a plurality of display modules*) (Paragraph [0003]).

Regarding claim 23, Dungan further discloses that when the microprocessor detects that a pre-determined concentration of the selected gas is present in the atmosphere, the microprocessor initiates transmission by the radio to the master station (*wherein the measurement means in the sensor module defines a gas concentration threshold, data signals indicating a gas concentration exceeding the gas concentration threshold being transmitted as broadcast signals*) (Paragraph [0113]). Examiner considers that when it meets the pre-determined concentration (the threshold), then it alerts.

Regarding claim 24, Dungan further discloses that the predetermined condition can be varied by actuating a data entry apparatus to change the data stored (Paragraph [0026]).

10. **Claim 26** is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2001/0040509 (Dungan) in view of US Patent No. 6,891,476 (Kitaguchi et al.).

Regarding claim 26, Dungan teaches the system of claim 14 as discussed above.

Dungan does not expressly teach the display module transmits the signals indicative of the measured gas concentration to at least one reader.

Kitaguchi teaches a radiation meter wherein a central system processes the data and transmits it to a portable electronic device carried by the user for the user to be able to read the data (Claim 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine this feature with the system of Dungan so that individuals could carry around reader devices and read the sensor data without having to be at the master station.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- **US Patent Application Publication No. 2004/0075566 (Stepanik et al.)**

teaches an apparatus system and method of monitoring gas in well sites that utilizes the internet to transmit data off-site.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KERRI L. MCNALLY whose telephone number is (571)270-1840. The examiner can normally be reached on Monday - Thursday, 8 AM - 6 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KLM

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/Jeff Hofsass/

Supervisory Patent Examiner, Art Unit 2612